

REMARKS

Specification

Paragraphs 22 and 34 have been amended to correct an obvious typographical errors. Regarding paragraph 34, as shown in referenced FIG. 1A, when the valve 60 is in the “first position,” it is passages 90 and 92, and *not* passages 84 and 86, that connect between valve pump ports 68, 70 and rod-side chamber ports 80, 82, respectively. Paragraph 31 has been amended to include the addition of a “communication line 63” which has been added to FIGS. 2A and 2B to specifically illustrate what was inherently already present in order for the actuator to receive pressure readings from the pump sensor 100. Finally, paragraphs 35 and 38 have been amended to delete the words “not shown” in front of “see FIG. 3,” since the referenced chamber structures are in fact shown in FIG. 3. No new matter has been added.

Regarding the objection to specification paragraph 10 set forth in the Office Action, Applicant respectfully disagrees that this passage of the Summary of the Invention somehow does not “agree with the detailed description and the drawings.” As unambiguously shown in FIGS. 1A, 2A and 3, when the valve is in its first position (“rod-side operation”), the pump clearly communicates with both of the rod-side chambers, in a reciprocating fashion, via lines 72 and 74 and/or pump outlet/inlet lines 56-58. In particular, the specification and drawings make clear that the pump 50 includes a valve or other switching mechanism 54 that switches the connection between the pump outlet and inlet lines 56/58 and the respective outlet and inlet lines 72/74 to allow the pump to supply and receive fluid to/from each of the respective rod-side chambers 22/42 or head-side chambers 20/40, depending on the position of the valve 60. See, e.g., specification paragraph 28, which states:

The outlet 56 and inlet 58 are connected by lines 72, 74 to the valve 60, which may transfer the fluid to the cylinders 12, 32, as explained further below. The pump 50 may include a valve or other switching mechanism 54 for reversing flow from the pump 50, i.e., such that during alternate cycles, the lines 72, 74 may supply fluid to and/or return fluid from the cylinders 12, 32, as explained further below. Alternatively, the pump 50 may be a reversible pump that may pump fluid alternately in one direction and in an opposite direction (i.e., such that the outlet 56 and inlet 58 alternate).

In view of the above, Applicant respectfully requests withdrawal of the objection to the specification.

Drawings

The Office Action further includes an objection to the drawings based on the alleged absence of “every feature of the invention specified in the claims.” Applicant notes that 37 C.F. R. §1.83(a) states

“conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated . . . in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box).”

Submitted herewith are corrected drawing sheets in compliance with 37 C.F.R. 1.121(d), as well as red-lined versions of same, including the addition in FIGS. 2A and 2B of a communication line 63 that connects the pressure sensor 100 with the valve actuator 66. This addition to the drawings is clearly supported by the original specification, e.g., paragraphs 30 and 31.

Claim 7, as amended herein, recites “one or more sensors for measuring a parameter related to the fluid delivered by the pump to the first and second barrels[.]” Sensor 100 is clearly an example of such “one or more sensors,” and although the specification makes clear that many other sensors may be used as an alternative to, or in addition to, sensor 100 (see, e.g., paragraph 24), Applicant respectfully submits that it is not necessary to further modify the drawings to show these possible additional sensors, since the illustrated sensor 100 is an adequate example. For example, specification paragraph 28 states:

The pump 50 may include one or more sensors 100 for measuring pressure within the apparatus 10, e.g., within the outlet line 56 and/or the inlet line 58. The pressure measured by the sensor(s) 100 may be substantially proportional to the pressure within the cylinder(s) 12, 32, thereby providing an indication of the load being imposed on the apparatus 10.

Claim 7, as amended herein, further recites “a controller coupled to the valve and the one or more sensors, the controller moving the valve between the first and second positions based upon the measured parameter.” The actuator 66 illustrated in FIGS. 2A

and 2B is clearly an exemplary embodiment of the claimed "controller." For example, specification paragraph 36 states:

The actuator 66 may receive pressure data from the sensor(s) 100, e.g., to monitor pressure output by the pump 50, within outlet and/or inlet lines 56, 58, and/or within the rod-side chambers 22, 42. If the pressure rises above a predetermined threshold, the actuator 66 may move the body 64 to the second position, i.e., to shift the apparatus 10 from rod-side to head-side operation.

In view of the above, Applicant respectfully requests withdrawal of the objection to the drawings.

Claim Rejections Under §112

The claims have been amended to more clearly recite what the Applicant regards as his invention. In particular, apparatus claim 1 has each been amended to clarify that the valve is fluidly coupled between the pump and the first and second chambers, and is movable between a first position wherein an outlet of the pump alternately communicates with the first and second rod-side chambers, and a second position wherein the outlet of the pump alternately communicates with the first and second head-side chambers. This configuration agrees exactly with the detailed description and drawings of the preferred embodiment. In particular, and as noted above, the pump alternately supplies fluid to, and receives fluid from, the respective rod-side chambers or head-side chambers, depending on the position of the valve. Apparatus claim 11 has been similarly amended.

Method claim 16 has been amended to more clearly point out that, in the first configuration, the fluid is delivered to the rod sides of the cylinders and, in the second configuration, the fluid is delivered to the head sides of the cylinders.

Applicant respectfully disagrees with the Examiner's conclusion that the pump only delivers fluid to one rod-side, or one head-side. Clearly, the specification and drawings of the present application teach that the fluid is alternately delivered between the respective rod-sides and head-sides, depending on the position of the valve.

If, even in view of the present Amendment, the Examiner still disagrees with this characterization of the specification and drawings, Applicant respectfully requests that the Examiner contact the undersigned representative of the Applicant for a brief telephonic interview to discuss same.

§102 Claim Rejections

Claims 1-3 and 11-13 stand rejected under 35 U.S.C. §102(b), over USP 4,455,921 (“Griesbach”). Claims 1, 7 and 8 stand rejected under §102(b), over USP 3,327,641 (“Klosterman”). In view of the foregoing amendments to the claims, Applicant respectfully requests reconsideration and withdrawal of these claim rejections.

Claim 1, as amended, includes the subject matter of canceled claim 7. Claim 11, as amended, includes the subject matter of canceled claim 14, thus overcoming the rejections over Griesbach, which does not teach or suggest the inclusion of one or more sensors for measuring a characteristic (claim 1), such as pressure (claim 11), of the fluid being supplied from the pump, and then employing a controller to switch the valve configuration between rod-side operation and head side operation based on the measure characteristic (e.g., pressure).


Klosterman does not disclose or suggest a valve (e.g., valve 280) that is movable between a first position, wherein the pump outlet (e.g., pump 271) alternately communicates with respective rod-side chambers of first and second barrels, and a second position, wherein the pump outlet alternately communicates with first and second head-side chambers of the barrels; nor does Klosterman teach the use of sensors to measure a fluid characteristic (e.g., pressure) and a control to switch valve configurations based on the measured characteristic, but instead relies on a bump valve to detect the end of a pump stroke.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that the present application is now in condition for allowance, and a Notice of Allowance is respectfully requested. If the Examiner has any questions or comments regarding this Amendment paper, the Examiner is asked to please contact the undersigned at the below-provided telephone number.

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Respectfully submitted,

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